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GOOD HEALTH

Editor: JOHN HARVEY KELLOGG, M.D., LL.D., F.A.C.S.

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GOOD HEALTH

Devoted to Hygiene and Race Betterment and the Development of an Aristocracy of Health

Edited by DR. JOHN HARVEY KELLOGG

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DR. JOHN HARVEY KELLOGG

Editor of Good Health Magazine

Winter Hot-Air Maladies

by *Dr. John Harvey Kellogg*

EVERY winter reports appear, now and then, of people who are frozen to death, being caught in some blizzard or found dead in some frosty garret, but the number of people who die during cold weather as the result of too much heat exceeds the mortality from cold at least a thousand to one. In the United States the danger of death from overheating in winter is far greater than that from freezing. This is largely due to the fact that everybody is familiar with the danger incurred in exposure to cold, but very few are aware of the dangers of overheating, and further, we are accustomed to taking proper precautions against injury from a low temperature, whereas in winter, we rarely think of the need of protection against excessive heat.

The danger from overheating beside being more imminent is less likely to be noticed for the reason that a moderate degree of overheating is not incompatible with comfort, whereas even a very moderate degree of cold produces discomfort.

Sensitiveness or non-sensitivity to cold is largely a matter of habit. In Paris and London one may see on the street hundreds of boys and girls running about with bare legs with the temperature well down in the forties; and in North Africa, where the temperature in winter sometimes

falls even below forty degrees F., thousands of natives, men, women and children, go about their work as usual without other garments than a thin cotton shirt covered with a slightly heavier cotton robe or cloak. The impression one receives at first on seeing people, especially children, running about with limbs exposed in weather which in the United States is supposed to demand protection by thick woolen garments, is that great risk is encouraged of injury to health; but inquiry shows that people who are habitually exposed to cold become "hardened" and have developed a resistance not only to cold but to infectious disease which affords them a highly important protection.

Habitual exposure to warm air, on the other hand, has the effect to lower resistance not only to cold but also to infections of various sorts. Exposure to cold, when not too extreme, produces a highly stimulating effect upon the bodily forces. Heat production is increased, appetite is keen, digestion is sound and all the vital functions are performed in a vigorous and efficient manner. On the other hand prolonged heat has a most decided depressing effect. Heat production is diminished and all the bodily functions are more or less impaired and the ability of the body to protect itself against

infection by disease germs is lessened.

Unfortunately these facts are not generally known. Heat is comfortable. Cold, on the other hand, is uncomfortable; it awakens the bodily activities and stimulates the nervous system through the disagreeable sensations which it produces, by which the defensive forces of the body are aroused. Unfortunately the public is not acquainted with these facts and the desire for comfort, together with the invention of stoves and furnaces to take the place of the old-fashioned, open grate, has led to a very marked change in living conditions during the winter season. At least this is true in the United States. A hundred years ago the average temperature of living rooms was in winter about fifty-five degrees. In those days, churches, public halls, theaters and other places of public assembly were rarely, if ever, supplied with artificial heat. Those who required heat in public places provided themselves with foot-warmers, little stoves containing burning charcoal. The temperature of living rooms was never allowed to rise above sixty degrees and was not expected to fall below fifty degrees. The normal living temperature for the winter season was held to be about fifty-five degrees.

At the present time living rooms are usually kept in the

winter time at a temperature of seventy to seventy-five degrees and often rise to eighty degrees. In fact it is not an uncommon thing to find in the winter season people sitting bundled up in a temperature of seventy-eight to eighty degrees and complaining about the cold weather. The same people in the summer time complain bitterly about the hot weather when the temperature rises to eighty degrees. The winter temperature of the average home today is fifteen to twenty degrees higher than a hundred years ago and as a result of this overheating there is a nation-wide lowering of vital stamina in the winter season which produces a liability to influenza, pneumonia, nasal and bronchial infections and numerous other so-called cold weather disorders, diseases which make the largest contribution to the mortality tables in the cold season of the year.

The Franklin stove was one of the leading influences which introduced the hot air era. Later the hot air furnace and steam heating provided the further facilities for heating which are

so efficient in heat production that it is only by the exercise of considerable care that overheating can be avoided.

The old-fashioned, open grate gave, without overheating, a degree of comfort even greater than that enjoyed at the present time. The powerful rays of light and heat emitted by a blazing fire pass through the air without heating it, but are instantly converted into heat when they are intercepted by the body or by any other object. It is thus possible for one sitting before an open grate to be perfectly comfortable in a room the air temperature of which is ten or fifteen degrees below the usual living temperature in furnace heated houses. The fire on the hearth warms the walls, the furniture and the people occupying the room without overheating the air of the room.

The average living rooms should be maintained at about seventy degrees in cold weather. It is possible to accomplish this by proper management of a furnace or steam heating plant, but these heating appliances, highly developed and efficient as they are from an economical standpoint, can not compare from the

viewpoint of health with the great open fire places of the last century. It may not be necessary to discard altogether our modern heating appliances and to return to the old-fashioned method of our grandfathers; in fact, a combination of the old and the new methods affords perhaps the most convenient and healthful method of heating our homes.

It must be remembered also that moisture as well as heat is necessary in cold weather to supply to the air the water vapor which is squeezed out of it in the form of frost and snow during the cold months of the year. Provision should be made for the evaporation of at least a pint of moisture every hour for each member of the family. This means the air will be kept moistened to the degree of about two-thirds saturation. Air thus moistened feels warmer at a given temperature than does dry air and is also more comfortable because it does not produce the irritation of skin and mucous membranes, eye, nose and throat, which is commonly experienced in furnace heated and steam heated houses during the winter season.

For Eye Troubles, Consult an Oculist, Not an Optician

A CONSIDERABLE number of people have their glasses fitted by an optician. That this is unwise and unsafe is argued by Dr. N. Bishop Harman, chairman of the Ophthalmic Committee of the British Medical Association. He presents the results of the examination of about 30,000 patients over a period of three years. About sixty-five per cent of these had errors or refraction only, about twenty-seven per cent had such errors plus one or more other eye conditions, about seven per cent had no error of refraction,

while one per cent had no appreciable eye defect.

When opticians discover eye defects, they are supposed to refer the patient to a regular ophthalmologist. In England only three per cent of such customers were advised to consult a specialist. Hence many persons went away without being aware of their eye troubles. Dr. Harman says that this situation is alarming, for early attention to these defects by a skilled physician might prevent severe disease or even loss of sight. The expert himself may have dif-

ficulty in diagnosing an ailment in its beginning. The opticians declare they can discover most of the ordinary troubles, mentioning glaucoma in this class. But Dr. Harman quotes various eminent authorities who say that identification of glaucoma is not easy even for the specialist. This is described as the most serious form of eye disease in late adult life and old age.

Three government inquiries in England have resulted in the conclusion that refraction should be done by a qualified eye doctor and not by an optician (*British Medical Journal*).

The Avocado—Aristocrat of Salad Fruits

by Lucia H. Merriam

ONCE a door-yard tree, known only in the tropics, where it was grown both for its grateful shade and nutritious fruit, the avocado is now on the way to becoming a staple of the American bill-of-fare, with commercial groves of large acreage established in both California and Florida and the demand for the fruit increasing yearly.

The United States Department of Agriculture is using its influence to establish the name *avocado* for this fruit, supplanting *alligator pear*, by which it was formerly known, that name being chiefly associated in the popular mind with exorbitant prices and luxury menus. The department points out that the name *avocado* originates from the Aztec word for the fruit, *ahuacatl*. A native of Central America, it is spoken of by Spanish-speaking peoples as *aguacata* of which *alligator* is a corruption. Pronounced in Spanish as if spelled *ahuacata*, one writer says in his defense of the word: "This is at once a beautiful word, almost expressive of the flavor of the fruit itself; it leaves the mouth with a pleasant slide, imprints a happy picture on the mind, and tickles the appetite with delightful anticipation."

The earliest written record of the avocado, according to Popenoe, is an account by a Spanish writer, written in 1519. In speaking of the fruits of Columbia, he mentions "one which looks like an orange and when

ready for eating becomes yellow; and inside is like butter and of a marvelous flavor." Another Spanish explorer and writer who also saw it in Columbia, wrote of it as a "pear," but carefully stated that it was a pear in shape only. Long before the Spaniards came, it had been used by the Indians of Central America and adjacent countries. It has been assumed that the avocado was introduced into Cuba and Jamaica by the Spaniards soon after the conquest and that they introduced it into Florida not long after.

The Mexican avocado has a characteristically thin skin and is quite smooth. In shape it is oval or pear-shaped, weighing from four to eight ounces. It is hardy and prolific. The leaves are anise-scented when crushed. The seeds are comparatively large.

The Guatemalan variety of the fruit is marked by its thick, woody skin, decidedly rough and in the green fruited varieties usually of a dark shade. The seed usually is small and fits tightly in the cavity.

The West Indian type, native to the lowlands of Central and South America, was introduced into the West Indies by the Spaniards. The trees of this species are more sensitive to cold than those of any other variety. The skin is smooth and leathery and is a yellowish-green. The seed is comparatively large and loose in the

cavity. The fruit stems are short in contrast to the Guatemalan type, which are borne on long stems. In Florida most of the commercially successful varieties that have been developed were introduced from South America, chiefly Guatemala.

The avocado is eaten by the connoisseur on the half shell, with a dash of salt, a sprinkling of lemon juice or *au naturel*. Numerous combinations are prepared for salad mixtures — alternate slices of avocado and tomato or Bermuda onion, or, cubed, it may be combined with grapefruit or bananas, or olives and chopped boiled egg.

Of all the edible fruits, the avocado stands preëminent as a source of concentrated nutrient adapted to human use. With the exception of vitamin C, the avocado contains every element required for human sustenance. Vitamin C is present in abundance in the lime or lemon with which the avocado is generally served.

The avocado contains more fat than any other fruit except the olive, and its fat is of the highest quality, wholly free from the unpleasant butyric acid with which many fats are contaminated, and containing a sufficient amount of vitamin A to maintain high resistance against bacterial infection, a quality possessed by few vegetable fats and lacking in olive oil. Some varieties of the fruit, especially those of Guatemalan

origin, contain twenty-five to thirty per cent of fat, so much, in fact that they are used by the natives of Guatemala like butter as a spread. In the olden time, it is said that it was known to the sailors as "midshipman's butter." The Cuban varieties of avocados contain only about half as much fat as the rough skin fruits of Guatemalan origin.

The carbohydrate content of the avocado is an invert sugar such as is usually found in fruits and flowers and is gathered by bees to form honey. This sugar needs no digestion, being ready for digestion as soon as absorbed.

The protein of the avocado is the same as that of the potato,

nearly double that of the banana, and is of the highest quality, much superior to the protein of bread and other cereal foods. Its composition is almost identical with that of milk. In fact, the pulp of the fruit is so free from fiber that it forms with water a fine emulsion which closely resembles milk in consistency and appearance, and with the exception of an excess of fat and the lack of vitamin C, may serve as a very satisfactory substitute for dairy milk. Prepared thus, the avocado may be given safely to young children and to the feeblest invalid.

The gustatory and nutrient properties of the avocado entitle it to a large place in human

dietaries. Instead of appearing only on rare occasions, as at present, and as an expensive luxury in localities near where it is grown, the avocado should become a staple factor in the American bill of fare. In composition it more nearly resembles a nut than a fruit proper, and like the nut may be properly regarded as a vegetable meat, not as a substitute for meat, but as one of the original protein and fat-rich products which made up the bill of fare of primitive man when, according to Professor Ami, of Montreal, Professor Elliot, of Oxford, and other paleontologists, not only man, but all other animals were exclusively plant eaters.

Safe and Scientific Fasting

THAT there are some benefits to be derived from fasting cannot be denied, provided the fasting is conducted in a scientific manner. Among these may be mentioned,

(1) The rapid disposal of surplus fat, when this seems advisable. In general, gradual reduction is decidedly preferable.

(2) Reduction of blood pressure.

(3) A short fast sometimes increases appetite and ability to utilize food.

There are several methods of fasting by means of which one may secure all the advantages of the prolonged fast without any of the dangers and inconveniences which long fasting involves. A one-day fast now and then is found by many individuals highly beneficial in recovering lost appetite, relieving headache, dullness, depression and various other unpleasant symptoms. The fasting should be accompanied always by copious water drinking. Four to six

quarts daily will be none too much. A good plan is to take a glassful of water every hour. Fruit juice may be added to the water to give it flavor. An ounce of agar, psyllium seed, or Kaba, should be taken during the day for bulkage. It is also well to take at bedtime an enema consisting of three or four pints of water at 100° F. to 105° F. with the juice of one or two lemons added.

What may be called a protein fast will yield excellent results. This is living a week on greens and fruit. Fresh or canned tomatoes should be used liberally, with fruit juices of all sorts and melons. Twice a day a liberal serving of greens, four to six ounces, should be eaten with large servings of lettuce and celery.

In complete fasting, symptoms of acidosis, nausea, headache and lassitude make their appearance by the second or third day, owing to the fact that the glycogen or stored carbohydrate of the body has been

consumed so that the fats and proteins are not well burned and the poisonous acid products resulting are beginning to accumulate in the tissues. Recent studies of metabolism have shown that by repeated short fasts, the tissues may be trained to burn the fat more completely, so that acidosis is postponed and is less pronounced. By this method, the patient fasts first for one or two days, then eats sparingly for two or three days, then fasts again for two or three days. After another interval of low feeding, a still longer fast of four or five days may be taken without developing unpleasant symptoms. This method of fasting may be employed for fat reduction in certain cases when fasting is resorted to for clearing the body of toxins or temporarily to reduce the work of the liver and kidneys to a minimum. The protein fast by means of a fruit diet affords, however, the ideal method, rather than absolute fasting.—J.H.K.

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See special subscription offer on page 29.*

The Food Value of Bran

THE COUNCIL on Foods of the American Medical Association published in the *Journal* for September (1936) an interesting article entitled *The Nutritional Significance of Bran*, the greater part of which we quote herewith:

"The bran amounts to approximately twelve to fifteen per cent of the grain. It has come into prominence since the development of modern methods of milling, which date back to about 1870. At first it was used almost exclusively for feeding farm animals, but subsequently it was introduced as an item of the human dietary.

TABLE 1. — Comparative Composition of a Crude and a Prepared Bran

Component	Moisture Per Cent	Free Basis Per Cent
Ash	7.2	8.4
NaCl .....	.....	3.2
Fat (ether extract)	7.1	3.3
Protein (N × 6.25)	17.0	14.3
Sucrose	1.6	9.2
Crude fiber	9.4	7.9
Carbohydrates other than crude fiber (by difference)*	59.3	66.1

*Osborne and Mendel found 27.6 per cent pentosans, 13.4 per cent starch and 4.2 per cent dextrin in crude bran, moisture free.

†Crude Bran (Based on Report by Osborne and Mendel).

**A Prepared Bran (Based on Report in THE JOURNAL, Feb. 9, 1935, p. 474).

From the standpoint of human nutrition, it should be mentioned that there are two principal varieties of bran on the market. Untreated bran is the mill product widely used for feeding animals and also, after cleaning, to some extent for incorporation into dough mixtures for making certain bakery products such as bran muffins. The prepared

type of bran has been subjected to processes designed to improve its palatability, and it is distributed primarily as a so-called breakfast cereal food.

* * *

TABLE 2.—The Iron Content of Crude Bran and Prepared Bran

Product	Moisture per Cent	Fe, Mg. per 100 Gm.
Kellogg's All-Bran"	5.4	15.3
Post's "Whole Bran"	8.8	16.4
Crude bran	9.8	9.5

"Other differences between crude and prepared bran to which attention should be directed are the concentrations of sodium chlorid and of iron. Salt is usually added in the preparation of the breakfast foods and this accounts for the presence of about two to three per cent sodium chlorid. The amount of iron in the prepared bran products is stated to be from about seventeen to twenty-five mg. per hundred grams. Crude bran ranks as a food rich in iron; it contains about eight to ten mg. of iron per hundred grams of dried bran. Analyses performed in a university laboratory for the Council on Foods are reported in table 2. These figures show that the iron content of certain bran products as purchased on the open market is considerably higher than the amount of iron which is to be found in the mill product. Considering that there are few food products of vegetable origin which even approach the high iron content of crude bran, it is difficult to understand how the iron content of prepared bran can be almost double the iron content of the mill product. This raises the question of whether

the iron content of wheat bran is exceedingly variable or whether iron is introduced in some manner during the processing treatment.

Nutritive Properties of Bran

"Interest in the dietary value of bran dates back at least to the days of Bunge. He showed that bread made from whole wheat contained about twice as much iron as ordinary white bread. These differences have been verified by subsequent analyses by other investigators and have been shown to be due to the presence of wheat embryo and bran in the whole wheat bread. Further evidence of the differential distribution of food substances in the wheat grain was afforded by the observations of Bell and Mendel. They dissected wheat by hand and concluded from feeding experiments with mice that the vitamin B content of certain portions of the grain was higher than the concentration in the entire kernel. Later work has verified the observations that bran contains a higher concentration of certain food factors than does the entire grain.

* * *

"(a) Inorganic Salts.—From the nutritional standpoint, the most important inorganic constituent of bran is iron. Attention has already been directed to the striking differences in the iron content of prepared bran products as compared with crude bran. Dr. Mary Swartz Rose, with her collaborators, has studied extensively the ques-

tion of the utilization of the iron of bran as compared with other foods. Using a sample which contained 10 mg. of iron per hundred grams, Rose and Vahlteich found in assays with rats that the iron of bran was well utilized. Later Rose, Vahlteich and MacLeod showed that the iron of bran was somewhat more effective in the production of hemoglobin in anemic rats than iron-equivalent quantities of egg yolk and of liver. Good results were also obtained when anemic rats were fed whole wheat as compared with the results observed when a solution of the ash of the same amount of wheat was fed.

"Subsequent experiments have shown further that the iron of bran is as well utilized as the iron of ferric chlorid. In two subjects, both of whom were young women, Vahlteich, Funnell, MacLeod and Rose showed that the iron of bran was as well utilized as the iron of egg yolk. The amounts of egg yolk or of bran consumed by these experimental subjects furnished 3 mg. of iron daily. It required 58 Gm. of egg yolk and 15 Gm. of bran to furnish this amount of iron. It is apparent therefore that the bran used in these experiments contained approximately twice as much iron as the bran used in the earlier experiments with the rats.

"(b) Protein. — The protein content of bran averages about seventeen per cent, which is about fifty per cent higher than whole wheat. Although the amino acid makeup of these proteins indicates a good nutritional value, Rubner early showed that the proteins of bran are digested with difficulty. More recently Murphy and Jones studied the nutritive properties of the proteins of wheat bran. They found that young rats grew normally on dietary mixtures in which bran supplied all the protein.

"Experiments on man were reported by Holmes in 1919. He studied the protein digestibility of wheat bran when as much as four or five ounces were eaten. The coefficient of protein digestibility was low, being only

thirty-seven per cent when fine bran was eaten and thirty-six per cent when coarse bran was substituted. His experiments have been criticized because of the large amounts of bran consumed and also because the diets contained relatively small amounts of total protein. Funnell, Vahlteich, MacLeod and Rose calculated from their experiments that the protein of bran was utilized by their subjects (young women) to the extent of about fifty per cent. It must be concluded that the proteins of bran are poorly utilized. Moreover, in the amounts that might ordinarily be consumed it is apparent that the proteins of bran can contribute but little to the daily protein requirements of man.

"(c) Vitamins. — The only vitamin known to occur to an appreciable extent in wheat bran is the vitamin B complex, and in particular vitamin B₁. As already described, Bell and Mendel showed that the vitamin B complex was differentially distributed in the wheat grain. In 1927 Plimmer, Rosedale, Raymond and Lowndes found that bran was about one-fifth as rich in vitamin B as wheat germ. In 1932 Rose and her collaborators reported that a sample of commercial bran contained somewhat less vitamin B than an equal weight of whole wheat. They concluded: 'One ounce of whole wheat bread will furnish sixty-three vitamin units and one hundred calories; one ounce of bran suitably prepared for human use such as has been used in this investigation will furnish at least forty-five vitamin B units, but not more than thirty calories.' The vitamin unit referred to was that of Chase and Sherman; in terms of international units of vitamin B₁, one ounce of the bran product investigated contains about twenty-three units. Thus it is apparent that although wheat bran contains vitamin B₁, it is not as good a source of this factor as whole wheat, wheat germ and many other food products.

"(d) Carbohydrates, Including Crude Fiber. — The most

publicized components of bran are the carbohydrates, particularly the indigestible carbohydrates referred to as crude fiber. In the dried commercial product reported by Osborne and Mendel, there were approximately seventeen per cent starch and dextrins, twenty-seven per cent pentosans and nine per cent fiber. As pointed out by Rose and her collaborators, true values for the carbohydrates are probably slightly higher than the figures reported.

"About one-third of the total carbohydrate, comprising the starch and dextrin, is digestible and therefore serves as a source of energy. The rôle of pentosans in nutrition has been reviewed by McCance and Lawrence. These carbohydrates, chiefly arabans and xylans, are of negligible food value because no enzymes of the alimentary tract are capable of hydrolyzing them. The same is true of cellulose, which makes up a considerable portion of the material called 'crude fiber.' However, bacterial action, which may convert considerable of the pentosans into volatile fatty acids, has less effect on cellulose. The latter when fed is recoverable to a large extent in the feces. Bran thus contributes bulk to the diet, and it was early recognized as having a laxative effect because of this fact. While the 'bulk' is made up chiefly of indigestible carbohydrates, it is well known that substances other than 'crude fiber' may contribute to the residues found in the stool.

Laxative Effects of Bran

"The laxative effects of bran have been studied by several investigators. Only experiments on persons will be considered in this report. Cowgill and Anderson compared the laxative effects of bran and washed bran in healthy young men. They found no differences in the two products when tested in fiber-equivalent quantities. The authors therefore concluded that the laxative effect of bran can be attributed to its fiber content rather than to substances, such as phytin or salts, which

may be leached out in the manufacturing process. They found as a result of their feeding experiments that the ingestion of bran leads to an increase in the weight of the stools. When the diet was selected so as to be low in crude fiber content, the addition of bran resulted in an increased number of bowel movements daily. These authors describe as a condition of marked constipation one in which an average of about six bowel movements a week was produced.

* * * *

"Cowgill and Anderson analyzed representative items of the control diets ingested by their subjects and compared the results of the fiber intake with the fiber content of the stools produced. It was shown that approximately sixty to sixty-five per cent of the crude fiber of mixed diets may disappear on passage through the alimentary tract. When bran was added, the weight of fiber that disappeared amounted to only forty-four to fifty-one per cent. It is thus evident that the fiber of bran is more resistant to decomposition by bacteria in the intestinal tract than is the crude fiber of ordinary foods. It was concluded that normal men exhibit 'satisfactory laxation' when their diet contains about ninety mg. of fiber per kilogram of body weight daily. This amounts to a little over six Gm. of fiber a day for an average sized man.

"Later Cowgill and Sullivan reported further investigations on the use of wheat bran as a laxative in six men who were troubled with constipation. It was shown that in all but one of these cases the addition of bran was efficacious in overcoming the complaint. Fruits and vegetables as sources of bulk were found satisfactory in two subjects. Another subject, however, apparently presented the picture of 'irritable colon.' He was unable to tolerate coarse vegetables or bran but was successfully treated with agar. The authors pointed out that diets of common foods containing suf-

ficient fiber to permit satisfactory movements in healthy persons may not do so in subjects troubled with constipation. They attributed this to the greater loss of fiber in traversing the alimentary tract of constipated subjects as compared to normal persons.

"Experiments on men are not entirely conclusive as far as constipation studies are concerned. It is well known that women are more prone to become constipated than are men. It is interesting, therefore, to note that Rose and her co-workers have studied the influence of bran on the alimentary tract of healthy women. As a result of these studies it was shown that the addition of bran to a controlled diet produced marked increases in the total weight and dry weight of the stools.

"In a recent paper by Parsons it is pointed out that the problem of fecal elimination is largely an individual one which is affected by many factors in addition to the amount of fiber in the diet. It is difficult to evaluate the results of her experiments as compared with other reports in the literature. The divergence of results indicates, however, the importance which subjective impressions may play in such experiments with persons.

"It seems reasonable to conclude from the evidence available that the weight of the fecal material and the number of bowel movements daily are dependent largely on the bulk in the diet, and that in normal men and women and in some constipated subjects, both may be increased by the ingestion of suitable amounts of bran. It also appears to be demonstrated that the fiber of bran is more resistant to decomposition in the alimentary tract than the fiber of many ordinary foods.

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"Indigestible carbohydrates in bran must be considered in relation to their effect on the digestibility of other proteins and on the retention of minerals.

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"Whatever the reason, it appears that the effect produced by moderate amounts of fiber on protein digestion, while definite, is slight. With abnormally high amounts of roughage, such as might be found in certain Chinese diets, Adolph and Wu observed a definite lowering of protein digestibility.

"Whitacre, Willard and Blunt found that the addition of fiber in the form of vegetables had no effect on the utilization of dietary fat. Morgan studied the effect of the ingestion of moderate amounts of a cellulose preparation on young women. She found a slightly increased excretion of fecal nitrogen and a definite increase in the excretion of phosphorus, calcium and fecal ash. She questions the wisdom of giving a high roughage diet to children or to older persons under conditions of a marginal intake of calcium.

Disadvantages from the Use of Bran

"In addition to the effect of bran on calcium excretion, there are other possible disadvantages to its use which demand thoughtful consideration. To many individuals bran is irritating to the mucous lining of the intestinal tract. It is self evident that bran or other rough foods may do serious injury if included in the diet of patients who recently have undergone operation of the stomach or intestine or who suffer with ulcer, carcinoma or other organic disorders of the gastrointestinal tract. Patients with such conditions occasionally develop constipation. Also at times patients with ulcerative colitis of amebic or bacterial origin develop constipation. If under any of these circumstances bran is resorted to as a means of relieving the constipation, the previously diseased tissue will be irritated with results that may be disastrous.

"It generally is less well appreciated that the constipation of many otherwise healthy individuals results from spasticity

(Continued on page 27)

Water: The Oldest and Most Potent of Remedies for Disease

by Dr. John Harvey Kellogg

WATER is without doubt the most ancient of all remedial agents for disease. This fact is evidenced by the frequent reference to its use in the earliest medical literature, as well as by the habits and customs of the most ancient peoples, as brought to light more fully within recent years by the study of the old Assyrian and Egyptian records. The reason for this is clearly to be found in the fact that water is a means not only usually found ready at hand, but one which adapts itself to almost every imaginable pathological condition in a remarkable manner, thus approaching more nearly to a panacea than any other known remedy. No other agent is capable of producing so great a variety of physiological effects, no other is so universally present, and hence none is so readily adaptable for meeting the various exigencies and indications arising from accident and disease. The ancient Egyptians, Hebrews, Greeks, Persians, and Hindus all employed water in the treatment of disease, as do the representatives of these peoples at the present time.

According to a Chinese record dating back several centuries before Christ, a physician prescribed for a woman of that country one hundred affusions

of ice-water, each followed by wrapping in a linen sheet, — a treatment in principle resembling the wet-sheet pack.

The cold bath has been in use in Japan for nearly eight hundred years, especially among the native country physicians, and nearly three hundred years ago a small treatise on the medical uses of the cold bath was published by Dr. Nakagami, in which it was especially recommended for acute mania, hysteria, asthma, and convulsions in children.

Among the Spartans of ancient Greece cold bathing was made obligatory by law. The bath in various forms is also frequently referred to in Grecian mythology.

Hippocrates evidently had an excellent understanding of the physiological properties of water, both hot and cold, which he employed in the treatment of fevers, ulcers, hemorrhages, and a variety of maladies both medical and surgical, giving many directions for its use which the experience of two thousand years has not improved upon. For instance, he directed that cold baths should be of short duration, and should be preceded and followed by friction; and he evidently understood the phenomena of reaction, since he

records the observation that after a cold bath the body quickly recuperates its heat and remains warm, while a hot bath produces the opposite effect.

Under the Romans the bath attained a very high degree of development. Emperors vied with one another in erecting magnificent public baths, capable of accommodating thousands of persons daily. In studying the interesting ruins of some of these structures at Rome and Pompeii, the author was astonished to find the perfection attained in every detail of the equipment of these ancient bathing establishments. Hot or cold water baths, hot-air and vapor baths, might be enjoyed at will.

Asclepiades employed water in nearly every form, — hot and cold baths, douches, compresses, etc. One of his disciples, Antonius Musa, attained great fame by curing the Emperor Augustus of a chronic catarrh by means of the cold bath, as a reward for which his statue was ordered to be erected in the temple of Esculapius; but a lack of discrimination in the use of this powerful agent led to his downfall. Being called upon to treat the emperor's nephew, Marcellus, a popular favorite, he adopted the measures which had resulted so admirably in the

cure of the athletic old soldier, but they proved too powerful for the effeminate youth, and he was prostrated to such a degree that he died soon after at Naples, where he had gone to receive treatment at the hot baths of Baiae. This enthusiastic apostle of hydrotherapy succeeded later in redeeming his reputation by the cure of the poet Horace.

Pastor Kneipp, the Bavarian water-cure empiric, a few years ago had a similar experience. Being called upon to visit the pope, who was suffering from chronic rheumatism, he was received with great honors; but the first cold bath given the aged prelate, entirely unaccustomed to such heroic treatment, occasioned such an exacerbation of his sufferings that the poor priest was peremptorily dismissed in disgrace. Had the patient been a sturdy young German peasant instead of a feeble Italian gentleman, the prescription might have succeeded better. A similar lack of discrimination, whether by a charlatan or a legally qualified practitioner, is always attended by disastrous results. The untoward effects thus produced should not, however, be attributed to scientific hydrotherapy,

but must be charged to the stupid audacity of quackery, or to the lack of information or experience of the otherwise competent physician.

According to Pliny, the bath was almost the exclusive method of treatment employed in Rome during five centuries. Celsus and other prominent Roman physicians highly extolled the bath in their works, Celsus later making it one of the three essentials of what he called a perfect therapeutic system, termed "apotheraphia," the other two being exercise and friction.

During the middle ages the Arabic physicians, the most learned men of their time, were enthusiastic advocates of the bath, especially in fevers, and their directions for the treatment of smallpox and measles could scarcely be improved upon at the present time. Rhazes recommended drinking ice water to the extent of two or three pints within half an hour, as a means of reducing the temperature in fevers. Avicenna recommended cold water for the relief of constipation.

M. Barra, of Lyons, published in 1675 an interesting little volume entitled *L'Usage de la Glace, de la Neige, et du Froid* (The Use of Ice, of

Snow, and of Cold). In this work the author anticipated many of the therapeutic uses of cold which have, by scientific experiments within the last half century, been placed upon a sound therapeutic basis. He called attention to the fact that the Hebrews made use of melted snow for drink, and cooled water by exposing it to the action of the wind, afterward keeping it in vessels covered with straw. He pronounced cold water to be the best of all remedies for continuous fever, and especially recommended it for "erysipelas, pestilential fevers, contagious boils, frostbite, dysentery, pleurisy, the plague, inflammation of the throat, and tightness of the stomach."

Lanzani, an Italian physician, wrote an elaborate thesis on the internal use of water for the treatment of fevers, in the early part of the 18th century. Fra Bernardino, about the same time, acquired the name of "the cold-water doctor" by the use of iced water in the treatment of indigestion, nervous disorders, hemorrhages, etc. He required his patients to drink from three to six glasses of ice water daily. He avoided sweating, and aimed to stimulate the bowels and kidneys.

Lip Reading as a Study Aid

THE number of children in the schools of this country with imperfect hearing is estimated at about three million, or six per cent. There is evidence which indicates that the evil is growing worse. Dr. Aphrodite J. Hofsommer, in an address published in the *Journal of the American Medical Association*, points out the handicap under which these children labor in school. They may be called stupid, and thus develop an inferiority complex, or in self defense become bullies. They show a low intelligence quotient; they supply proportion-

ately three times as many repeaters as normal children. Dr. Hofsommer tells how this situation was met in Webster Groves, Missouri. The hearing of all children is tested; those who are deficient have instruction in lip reading.

After a year or two, these subjects were found to have improved in their studies and in behavior. To avoid humiliating them, they were kept in the regular classrooms. An increase in intelligence quotient was shown by forty-seven per cent and definite classroom improvement was made by seventy-six per

cent. Most of the children with impaired hearing who refused instruction in lip reading, revealed a drop in the intelligence quotient.

In the discussion of the paper, mention was made of the importance of the early discovery of slight defects which the parents might overlook. Corrective measures were thus rendered more efficacious. In Minneapolis, where hearing tests had been a routine for nine years, the incidence of a significant hearing loss had been reduced from eight to four per cent.

FROM THE EDITOR'S PEN

OUR OBJECTIVES

THE EDITOR considers himself most fortunate in being able for the sixty-third time to join his readers in welcoming the New Year and sending each one of them a hearty greeting and best wishes for health and prosperity for each and every day of 1937, through meticulous observance of the rules of biologic living.

Sixty years ago, this magazine took a new start. For several years, beginning in 1866, a monthly journal called the *Health Reformer*, had been published by the Western Health Reform Institute, of which it was the mouthpiece. The promoters of this enterprise were convinced that many of the methods of treating disease then in vogue were irrational and hindered Nature rather than helping her in her battle against the enemies of health. Pasteur was just beginning to make his great discoveries in relation to germs, and Edison was engaged in making researches which later led to the discovery of the electric light. The Health Reform Institute championed revolutionary ideas in relation to diet and living habits, and likewise in reference to the treatment of disease, and earnestly advocated a return to Nature by the use of natural foods and natural remedies.

The result was the development of a strong opposition to the teachings of the institution, some of which were perhaps somewhat ultra, and were presented in such a way as to arouse considerable antagonism, especially on the part of the medical profession.

At that time, there were many similar institutions in different parts of the United States, all of which were under the ban of professional censure and opposition. The meatless dietary maintained in these institutions, as well as in many lay establishments, such as Oberlin College and the Brook Farm Experiment promoted by George Ripley, later the editor of *The New American Cyclopaedia*, and the late Charles Dana, father of the *New York Sun*, was ridiculed as faddism and fanaticism, and condemned as dangerous, since it was at that time an almost universal practice among doctors to prescribe flesh meats as a

health-building dietary, even the drinking of blood as a sovereign remedy for anemia. In some of the abattoirs of such cities as New York, Boston, and other large centers, comfortable waiting places were provided where certain classes of invalids gathered daily to imbibe warm blood from the bleeding throats of slaughtered animals.

The water-cure era was waning. The popularity of the various health institutions, electrical institutes, Swedish movement institutes and allied establishments, were beginning to wane in the 60's, and by the end of the next decade had nearly all disappeared.

The bane of these enterprises was their empiricism and lack of scientific direction. Empiricism also prevailed in all the various schools of medicine which existed at that time, for science had not yet provided a rational foundation for medical practice, which was then properly called an art rather than a science. But the results and teachings of such leaders as Benjamin Rush, of revolutionary times, Austin Flint, Oliver Wendell Holmes, Jacob Bigelow, of Boston, Hoffmann, in Germany, Dujardin-Beaumetz in France, and especially the discoveries of Pasteur, Metchnikoff, Claude Bernard and his pupils, provided a foundation for a rational system which within the last half century has grown into a real science of medicine. In medical gatherings, we no longer listen to rhapsodies about "the healing art," but hear instead disquisitions which elucidate the fact that the sick are not healed by chemical magic or any other artificial means, but by the living forces within the body, the same forces that have built the body from a minute and almost invisible speck of life to the fullest development of the human form divine, with all its splendid faculties and powers. Healing is creating. All that doctors and nurses can do is to coöperate with Nature in her efforts to resist and combat the enemies of health and life to which every living creature is more or less constantly exposed.

Sixty years ago, when this new philosophy was beginning to take shape, this magazine, the institution and work with which it was allied, took a new start. The belligerent policy which

had provoked opposition and the empirical methods which lacked scientific foundation, were abandoned and a more tactful policy and more rational methods were adopted.

Unfortunately, the disfavor into which the work had fallen because of erroneous methods and policies, continued to handicap the work of the institution long after the provoking causes had disappeared. But year by year, new and most convincing evidence continued to bring additional support to the view that the body heals itself and that the part played by doctors, nurses and remedies is very subordinate, merely that of coöperation.

For sixty years, GOOD HEALTH has stood — in the early days almost alone — as an advocate of a new philosophy of health betterment and disease prevention through right living habits and the employment of rational physiologic means, or so-called *physiotherapy*. The opposition which was active fifty or sixty years ago gradually disappeared. The marvelous discoveries of nutrition laboratories have destroyed the last vestige of support for the clamorous demands made by the packers upon the public to "eat more meat," by demonstrating that animal flesh as an article of diet is a very poor food at best, is not suited to man's needs and is a food that can be dispensed with, not only without injury, but with positive advantage and benefit.

The discoveries of Pavlov opened the door to an understanding of the physiology of digestion.

The study of vitamins has made clear the necessity for a return to Nature in diet by a larger consumption of fresh, raw foods, such as constitute the staple diet of the gorilla and the chimpanzee in the African forest, where they were studied by the late Professor Carl Akeley. Vitamin starvation is now known to be without doubt the leading cause of disease in this

country, the natural result of our diet consisting chiefly of unnatural denatured and damaged foods.

And the methods of treating disease pioneered by this journal and the institution with which from the beginning of its existence it has been associated, are no longer denounced as charlatanry and quackery, but have become the very backbone of medical practice, not only the most popular with the laity but recognized by the profession as most effective of all classes of remedial agents.

The change in name of this journal from the *HEALTH REFORMER* to *GOOD HEALTH*, nearly sixty years ago, indicated the change of policy which was made when the present editor took charge of the publication, and since that time the ruling policy of the magazine has been the promotion of reform through education by the massing and scattering of scientific evidence, trusting to the power of truth to fight its own way in opposing error.

In this field, *GOOD HEALTH* has been from the first a leader and still occupies the front rank, specially fitted for the place by its association with the Battle Creek Sanitarium and its research laboratories, through which many new discoveries have been made, also through constant contact with the world's great laboratories and the extensive literature which has sprung up within the last half century relating to human health and methods of disease prevention.

The great objectives of this journal which have been maintained for the last sixty years are still kept in view and with plans now in preparation, it is believed that in coming years even more effectively than in the years that are passed, this magazine will be made an epitome of the progress made in health promotion and disease prevention, especially in relation to individual habits and home conditions.

British Nation Threatened with Extinction

THE birth rate in England is falling so rapidly that, according to the London correspondent of the *Journal of the American Medical Association*, the situation has become really alarming. The facts as summarized by the *Springfield Republican*, indicate that "The population will be reduced anywhere from one half to one-tenth of its present size in the next one hundred years if the prevailing trend continues, the correspondent said, and complete disappearance is 'only a matter of time.'

"Schools already are being closed, he added, because there are no children to attend them.

"Nation of Old People"

"The decline in the birth rate — steady for the last sixty years — is rapidly making Britain a nation of old people, the correspondent explained, because 'improved sanitation has prolonged life' meanwhile.

"Although figures showed that England's population had increased by 12.5 per cent a thousand annually from the beginning of the nineteenth century to the World war — the highest rate in Europe — and then slumped to 4.4 per cent from 1924 to 1934, the Journal's correspondent asserted, 'These do not reveal the seriousness of the position.' He continued. 'A slight increase of population still exists. What few people realize is that, while a population may increase for some time, its fertility may already be reduced to a level which means, if unchanged, ultimate extinction. This has occurred in England'."

That a similar condition exists in this country was shown more than twenty years ago by Professor Wilcox of Cornell University, who calculated that if the decline in the American birth rate then shown by the reports of the Bureau of Statistics, should continue at the

then present rate, by the year 2,000, not a single baby would be born in America.

The decline of the birth rate has, as a matter of fact, been greatly accelerated within the last twenty years, and is now at the lowest level on record. The greatest decline is among the better classes of the population. Among the inferior classes, the birth rate is far higher than among the more intelligent classes, and far higher than it ought to be, leading to a gradual increase of the proportion of inferior types to the superior ones. If not in some way arrested, the continuance of this situation will ultimately reduce the nation to a race of imbeciles, lunatics, and epileptics, a result which the anthropologists consider unavoidable, since the downward tendency has now reached so advanced a stage that it has apparently gotten far beyond control.

Fingerprinting Brains

BY MEANS of a special instrument for registering the delicate electrical current caused by action of the brain, two professors of the University of Iowa, Drs. Travis and Gottlober, have recently succeeded in demonstrating that each person produces electrical brain waves of a special pattern and so characteristic that it may be used as a fingerprint for identification. A recent test showed the new method to be accurate to the degree of ninety-four per cent. Experience and improvements in technic may in time make these brain waves even more accurate than fingerprints. As yet there appears to be no hope that it will ever be possible to translate the curious wave markings made by the thought indicator so as to be able to read by this means a person's mind or his thinking.

An interesting problem for some future scientist to solve will be the possibility that these brain waves of electricity caused by mental activity are transmitted to the "ether" like radio waves, so that thought trans-

ference through the atmosphere may become a demonstrated fact. If this actually does occur, so that every brain is in fact a radio-sending mechanism, what a medley the atmosphere over a great city must be.

Another problem for the future will be to prove whether or not the brain is an ether wave receiver as well as a sender. What a multitude of weird mysteries remain for the future to clear up.

Coffee Causes Insanity

A CASE of insanity due to the use of caffeine, the active principle of coffee, was reported by Drs. McManamy and Schube. A young woman of twenty-four, being overworked, took caffeine three times a day to relieve the sense of fatigue. She felt energetic, but was soon unable to sleep, and was obliged to take phenobarbital for insomnia.

After taking an extra large dose one evening, she began to swear and throw things about. After a few months' confinement in a hospital, she recovered her mental balance, but soon relapsed, after again resorting to the use of caffeine, and was sent to a hospital for the insane.

After several weeks' improvement, she again relapsed. Investigation showed that she was taking four cups of coffee a day. When coffee was withheld, she soon recovered.

Physicians have long recognized that cases of coffee intoxication are by no means uncommon. Dr. Powers reported thirty-six cases. The symptoms included vertigo, headache, nervousness, visual disturbances, nausea, ringing in the ears, vomiting and heart irregularity. One woman was treated as a psychoneurotic without any benefit but got well when she ceased drinking coffee. Dr. Orendorff had a patient, a girl of eighteen, who had severe eye symptoms, headaches, insomnia and lapses of memory. She was

indifferent to the usual conventionalities and proprieties. It was found that she was taking three to six glasses of coca-cola and two or three cups of strong coffee daily. When she stopped the use of coca-cola and coffee, she soon recovered.

Civilized society will some time see the folly of aggravating the effects of the nerve strain resulting from our highly tense modern life by the use of such tension-raising drugs as tea and coffee, coca-cola, chocolate, maté, and tobacco, all of which are habit-forming poisons.

One effect of caffeine is to increase the secretion of urine over the intake of water, decreasing thereby the various body fluids. Kraepelin found that tea and coffee facilitated the reception of sensory impressions and association of ideas, but retarded the transformation of intellectual conceptions into action.

Dr. S. Weir Mitchell and the Meatless Regimen

THE LATE Dr. S. Weir Mitchell of Philadelphia, one of the most distinguished physicians of his time, has often been quoted as an advocate of the necessity for meat as a fat- and blood-building food. It appears, however, that this use of his authority is not warranted, since in one of his works, in referring to the justification of the killing of animals for food, he remarks: "The argument as to need for animal flesh is hardly a help. Men, in fact nations, live without it; and it is quite possible that we have in time more or less manufactured both the appetite and the need for this diet. Our nearest anatomical kinsmen, the monkeys, are all vegetarians."

Bunge twenty years ago called attention to the fact that "the normal food of the adult should be furnished by the protein and carbohydrates in the proportion met with in the cereals: (corn

ten per cent; rice, nine; wheat, twelve; average, 10.3). He also noted that Bavarian laborers, who do the hardest sort of work, live on a diet of flour and fat; and he referred to the investigations of Panum and Buntzen, from which it appears that "even a carnivorous animal can be nourished on cereals and fat." These investigators kept a dog in good health for months on an exclusive diet of oatmeal and butter, and without loss of weight. There are instances on record in which dogs and also cats have refused to eat meat and have lived all their lives on a fleshless diet. The writer has known of several dogs that refused to eat raw meat.

Dr. Alonzo Taylor, professor of physiological chemistry in the University of Pennsylvania, in his work entitled *The Chemistry of Digestion and Metabolism*, says: "A proper vegetarian diet is in every way a normal and competent diet. Plant proteins contain the same amino acids as animal protein and all are there present in abundance. It is quite immaterial to the body whether it forms its stock proteins from amino acids derived from plant protein or from animal protein."

Every Fifth American Is Sick

THE United States Health Service has recently made an extended research which led to the discovery that one out of every fifth person in the United States suffers from some chronic disease, such as rheumatism, heart disease or some other chronic malady. When it is remembered that chronic diseases are for the most part incurable; that is, permanent impairments under ordinary conditions, it becomes at once evident that disease is not only a terrible handicap but enormously expensive.

Mr. Perrott, the statistician who made this study, calls attention to the necessity for a great health campaign in an effort to prevent this enormous loss of

human efficiency, and to lift this great burden of suffering and misery, the cost of which is too great to be estimated in monetary units.

Alarming Prevalence of Trichinosis

A NEW test for trichinosis has been discovered by Drs. Augustine and Spink, of the Harvard Medical College, in which the serum of the blood is examined by a preparation made from the bodies of trichinæ. This proves to be the most delicate test that has been discovered. Its use in two hundred successive cases in San Francisco hospitals showed that more than twenty-four per cent, or slightly more than one-fourth, were infected with trichinæ.

A series of fifty-eight examinations made in Boston showed over twenty-seven per cent to be infected.

Of a number of fresh sausages examined, twenty per cent were found infected.

At the present rate at which the infection is spreading, within a few years the average man will have to be regarded as a community, consisting of many millions of inhabitants, rather than as single individuals, a sort of commensal partnership between man and the lowest forms of scavenger life, which is no credit to human intelligence.

According to the latest evidence presented, every fifth hog and every fifth man, woman and child of the United States, is a perambulating menagerie. It seems probable that nearly one half the adult population of the United States are carriers of this filthy parasite. If these worm-infested hogs were shipped to us from Japan, or some other foreign country, ways and means would be adopted immediately for preventing the further introduction of a parasite capable of doing vastly more harm than the Mediterranean fly, or thousands of similar pests. But because the trichinæ

industry is being promoted by a multitude of live stock raisers and wealthy packers, practically nothing is done about it. The guardians of the public health are simply sitting idly by and watching the process of infection proceed.

Perhaps some time in the future, the historians of our blessed country will describe the present as a trichina epoch, when the pork parasite completed its invasion of the American strain of *homo sapiens*, and became his multiple commensal brother.

The Self-Disinfecting Power of the Human Body

BY MEANS of investigations made at the Research and Educational Hospitals of the University of Illinois, Doctor Lloyd Arnold and his associates discovered that the disinfecting mechanism of the body is one of automatic nervous balance. That is, we are able to resist the onslaught of infectious disease so long as the integrity of the nervous response can be preserved. Self-protective power decreases as temperatures rise, and increases as normal temperature and humidity are restored. High temperatures produce loss of tone in the intestinal tract, for example, and this results in heightened susceptibility to gastrointestinal disorders. A high temperature also increases the permeability of the tissues, and it was observed that "colds" may be acquired directly by means of bacteria passing through the walls of the gastrointestinal tract and entering the lungs through ascending lymph channels instead of through the respiration. These studies should lead to changes in therapeutic methods, and to have practical application in the regulation of air in hospitals.

The good effects of temperature regulation will be enormously increased by adding the use of acidophilus culture.

A DIGEST OF HEALTH PROGRESS

Prevention and Cure of Pneumonia

NEW YORK STATE is making a strong effort to check the ravages of pneumonia, one of the chief causes of death for people in the active years of life. Heart disease and cancer contribute more heavily to the mortality rate, but are largely confined to older persons. An account of the campaign, written by Dr. Russell L. Cecil for the *New York State Journal of Medicine*, contains information which should be generally known.

The first task — not an easy one — is to lessen the number of cases. The only method of immunization available at present is effective for but a few months. But pneumonia is usually preceded by a cold or influenza. Care of these will therefore decrease the incidence of the graver disease. An acute cough with fever may indicate pneumonia.

When the patient is ill, he should have good nursing. The mortality is considerably reduced by this factor. If cyanosis develops, that is, if the skin turns blue from lack of a proper oxygen supply, the oxygen tent should be resorted to. Unfortunately this is expensive and requires expert supervision.

The serum treatment, it is pointed out, now achieves a high degree of success. There are various types of pneumonia, the three commonest accounting for about seventy per cent of the cases. In type one, the most frequent, the mortality is 33.6 per cent when no serum is given, but only 15.7 when it is administered. Prompt treatment is important. If it is given within the first four days of the attack the death rate is only 9.6 per cent in type one.

Most of the patients who die from pneumonia die from a complicating pneumococcal bac-

teremia. The death rate from this is cut in half by the serum in types one, seven and eight. The anti-pneumococcal serum is valuable for those who indicate possible recovery, since it usually shortens the acute stage of the disease by several days and thus also cuts down the period of convalescence. Most of the cases do not reach the hospital until after the third day, and this appreciably increases the death rate. Therefore prompt medical attention is highly desirable.

Vitamin D Makes Babies Grow

ACCORDING to an article in the *Journal of Pediatrics*, Drs. Stearns, Jeans, and Vande-car, of the University of Iowa, demonstrated that the liberal use of vitamin D causes growth greater than that of the average. When the amount of vitamin was reduced from 340 units to one-third or one-sixth as much, the rate was reduced to a marked degree. The same effect was observed if, instead of giving the vitamin D with their food, the children were exposed to light and air by keeping them out of doors several hours daily.

Domestic Care of Mental Patients

THE NUMBER of mental defectives in this country is increasing at a greater ratio than the population; the burden of caring for them in institutions weighs heavily on the taxpayer. In some states the appropriations are merely enough for the actual care of the patients; practically nothing can be expended on special psychiatric care.

In Europe the system of boarding out mild cases has shown satisfactory results. In Gheel, Belgium, they are distributed among the farmers of a certain district but have constant medical supervision. In

Melton, England, the plan has succeeded through the aid of local voluntary associations. Scotland in 1933 boarded out over thirteen hundred patients, about seven per cent of the total. Very few had to be returned to the institutions as unsuitable for being in homes. Latent capacities in many were discovered and their self-respect aroused. While the intelligence quotient might not be affected, there was likely to be a mental and physical improvement. The results in the case of children were especially encouraging. The community came to have a sympathy with the unfortunates and an understanding of their situation.

Besides the effect on the patients of exchanging an institutional life for a normal one, there is an economic advantage in having them productively engaged. Congestion in hospitals is lessened and the need removed for building new ones. The *London Lancet*, which gives these facts, does not tell what is the cost of this boarding out system.

Trench Mouth from Soiled Drinking Glasses

TRENCH mouth (Vincent's infection) was heard of a good deal among our soldiers in France and is now becoming more and more common in this country. In some states it is now classed as a common communicable disease and must be reported within twenty-four hours to the health officer. Dr. Don Chalmers, of Jackson, Mich., as quoted by the *Science News Letter*, says that in 1931, seven cases were reported in the state of Washington, while three years later the number was 343. In up-state New York, the figures for these years were 880 and 1,733. Similar increases occurred in other parts

of the country. It is certain that by no means all the cases are reported.

The chief reason for the spread of the malady is that glasses in drinking places are not properly cleaned. Those which have been washed and are supposed to be ready for use, contain the germs on the rim. Dr. Lyons says that the chance of getting trench mouth with a glass of beer are one in five. The causative organisms may get into the gums and propagate there without giving the patient much discomfort.

To check the increase in the disease there should be more rigid enforcement of the sanitary laws governing the cleaning of glasses in drinking places; in addition the public should be educated to demand protection to health.

Sugar As a Remedy in Mushroom Poisoning

EXPERIMENTS in France recently have demonstrated that in case of mushroom poisoning, there is a great fall in the blood sugar. When sugar was administered to rabbits poisoned by mushrooms, nine out of twelve of the poisoned rabbits survived, while among those who received no sugar, none recovered.

The remedy has not yet been tried upon human beings, but its use seems to be worth while.

Cobalt Necessary for Blood Building

AT A RECENT meeting of the National Academy of Sciences held in Chicago, announcement was made of the discovery in New Zealand that cobalt is essential for the blood-making process.

The occasion for the discovery was an observation made on a cattle ranch where in a herd of cows turned into a field of clover, several refused to eat and even tried to escape from the enclosure. Some cows which

did eat this food were found to be deficient in red blood cells. Analysis at the University of New Zealand showed that the soil in the field lacked the characteristic spectrum line for cobalt observed in other soils. The ailing animals recovered when cobalt salts were added to their diet.

Dr. Kato found that rats fed with heavy amounts of cobalt developed polycythemia in which there is an excess of red blood cells. An infant suffering with physiologic anemia received cobalt salts and its red blood cell count rose to normal. When these salts were withheld, the anemia recurred. Addition of iron and copper to the food had not been of any benefit.

Cobalt is widely present in foods and no diet can be devised from which it is wholly absent. However, in some cases the body may not be able to utilize this metal properly, or may require more than the usual amount.

Low Blood Pressure and Colonic Stasis

HIGH blood pressure is a common condition which has received much attention from the laity as well as from the medical profession. Less is heard about low blood pressure, although this too exists in many individuals. As a rule these cases fall into one of three groups, congenital, physiological or pathological. The first two are usually associated with constitutional inferiority, declares Dr. Martin J. Synnott in the *Medical Record*, and in themselves have little or no effect on the efficiency or working power of the patient. If the pulse pressure falls below thirty, the volume output of blood is diminished, the coronary arteries are not filled during diastole and the individual may faint or experience dizziness from cerebral anemia.

Hypotension is associated with a condition known as "potential diabetes," and is observed in obese persons who consult their physician in regard to

an obscure neuritis. Even if there is no sugar in the urine, a chemical examination of the blood should be made. If this shows an excess of blood sugar, a prediabetic state is disclosed. Many patients with occult tuberculosis (non-active or healed) have a low pressure. Focal infection may also bring on hypotension. In the early stages of heart involvement from chronic intoxication, the pressure may at first be high but later go below normal. In mental or physical strain it may shoot up to 180 or 200.

In the World War there were met cases of what was known as effort syndrome. The principal symptoms were breathlessness, palpitation, pain near the heart, sweating, dizziness, extreme nervousness and general physical disability manifested by fainting during drill or slight exertion. Hypotension was almost invariably present. This condition is often seen in surgical shock.

In treatment, focal infection should be sought. Most patients of this class suffer from intestinal stasis or constipation, which is caused by muscular inertia of the colon. The diet should include plenty of vitamins and minerals. Various applications of electricity, massage, abdominal exercises and manipulation of spinal nerves may be helpful.

Change of the intestinal flora is highly necessary in these cases and may be accomplished readily by the free use of Lacto-Dextrin and soy acidophilus milk, a highly potent culture of the protective germ, *Lactobacillus acidophilus*, in milk prepared from the soy bean.

Sports for Women

ACCORDING to the *Journal of the American Medical Association*, a commission in Belgium has been studying the physical effects of sports on women athletes, and has reached the conclusion that only when the greatest precautions are taken should women take part in high speed racing events.

They should avoid those sports which demand the utilization in a relatively short time of all the organism's reserves; violent and rough jumping in which the fall cannot be broken, and exercises which involve suspension by and leaning on arms. It is not pretended that the last word has been spoken on this subject, but tentatively it should be set down that women ought not to engage in boxing, exercises with dumbbells, football, ice hockey, bicycle racing, pole vault, foot racing and ski jumping. They may be permitted to take part in tennis, handball, basketball, swimming, cricket, horseback riding, boating, golf, lacrosse, field hockey, fencing, skiing (without jumps), skating and javelin hurling.

Cow's Milk Harmful to Both Infants and Adults

ALLERGIC reaction, or sensitization, to cow's milk is most common in infants and young children but no age is exempt from it. According to the observation of Dr. Charles Gilmore Kerley (*New York State Journal of Medicine*), it is becoming more and more widespread. Adults often establish immunity from habitual ingestion throughout the years. The symptoms are likely to be much more intense in the young than in those of mature growth. In the adult there may be migraine, chronic colitis, habitually coated tongue and offensive breath, frequent headaches, constipation, periodic gastrointestinal crisis and chronic eczema.

This peculiar sensitiveness is often inherited. Dr. Kerley has seen it manifested through three or four generations. A young woman who could not tolerate cow's milk gave birth to twins. One was made sick by cow's milk; the other had to be brought up on it, being unable to take breast milk. Another mother drank a pint of milk a day without any inconvenience, but her nursing baby developed eczema. This was healed when

the mother ceased to use cow's milk.

The allergy in children may take one of three forms. First, is shock. A breast-fed baby, nine months old, needed additional nourishment but was made sick by cow's milk. Dr. Kerley tested it by placing eight or ten drops of this liquid on its tongue. In a few minutes the child passed into a condition of urgent shock, extreme pallor, shallow respiration, unconscious, the heart sounds barely discernible. Under vigorous stimulation, the child recovered and thrived on goat's milk.

Another child, ten months old, hesitated to take cow's milk. When compelled to take two ounces of cow's milk, the infant went into collapse and died seventeen hours later.

A much larger group of infants have gastrointestinal symptoms with a wide variety of symptoms. These may include lack of appetite, habitual vomiting, periodic gastrointestinal crisis, constipation, oftentimes alternating with diarrhea, a condition usually accompanying considerable abdominal distension. The most frequent complaint is failure to gain weight. There may be incipient rickets or secondary anemia.

In the third group, the allergy is manifested by skin reactions—eczema, urticaria, giant hives. In eczema the treatment should include the use of evaporated milk cooked for one or two hours or skimmed fresh cow's milk cooked four or five hours. The second is preferable, for the fat either interferes with the desensitizing process or adds an element that predisposes to the skin disease.

The best plan for securing quick relief in these cases is to feed Maltese Nuts or a vegetable milk prepared from the soy bean. Milk prepared from almonds or pecans may also be used successfully. Orange juice to furnish vitamins and Lacto-Dextrin to aid in changing the intestinal flora, should be used in connection with the vegetable milk substitute for cow's milk.

Most infants who show intolerance for cow's milk have some time been overfed with it. Not infrequently the overfeeding shows itself in excessive weight. Such infants are often exhibited by their parents or nurses with great pride as samples of superhealth, but the picture changes when skin eruptions, vomiting, or colitis, or abdominal pains make their appearance.

Boiling cow's milk for an hour or two will sometimes enable the sensitized infants to make use of it. Care should be taken to skim the boiling milk thoroughly to remove all the skum which appears on the surface, which consists of lactalbumin and lactaglobulin, which are believed to be the constituents of milk which are chiefly responsible for the intolerance often shown to it, especially by young infants.

The youthful patients who have come to Dr. Kerley with this allergy have with few exceptions been fed full strength raw cow's milk at a tender age, in connection with other food substances unsuitable for the life period. "The story is one of the overfed, thriving infant, the family joy until trouble arises."

Renaissance of an Old Remedy

HALF A CENTURY ago, so-called vacuum treatment was in great vogue, especially in America and France. This treatment consisted in exposing a part, or even the whole body, with the exception of the head, to the influence of reduced air pressure. In some cases, hemispherical glass vessels attached to vacuum pumps were placed in contact with the skin in such a way as to produce a confined space filled with air. When the air was partially exhausted by the action of the pump, the skin and underlying flesh were drawn into the cup and were filled with blood by the great distention of the blood vessels supplying the tissues involved.

When the vacuum was broken, the flesh returned to its normal contour.

This operation was known as *cupping*. By repeating the process a number of times in succession, the amount of blood passing through a part would be very greatly increased.

In another form of vacuum treatment, a metallic vessel somewhat resembling a large boot in shape was used. Into this a leg was introduced at the upper opening enclosed by a rubber collar tightly fitting the leg at one end and the top of the boot at the other. By alternately pumping air from the boot and allowing it to re-enter, the blood vessels of the leg could be dilated and the movement of blood through the leg greatly accelerated.

This method was used in the treatment of various forms of disease, especially in diseases of the blood vessels. Beginning more than fifty years ago, vacuum treatment was extensively employed at the Battle Creek Sanitarium, and it was used in the treatment of many hundreds of patients between the years 1883 and 1915. As the result of the introduction of diathermy and the infra-red, and intensive methods of applying heat, the method has been but little used during the last twenty years.

Within the last few years, considerable interest has been aroused by the exploitation of the vacuum method under the name of *pavaex therapy*. The treatment is recommended in cases of frostbitten feet, intermittent claudication, a form of cramp occurring in the legs as the result of diminished blood supply through changes in the arteries, indolent ulcers of the lower leg, ununited fractures of the lower leg bones.

It is still a question whether this old-fashioned method under its new name is any more effective than the methods which have in the last twenty-five years superseded it and retired it to the limbo of obsolete methods.

Poisons Which Pass through the Skin

THE SKIN serves as a protection to the body but it is by no means an absolutely closed gateway. Various substances can enter through it. Some liquids and solids which penetrate the skin can be measured in the urine. Professor Burgi, of Berne, as quoted in the *Lancet*, has invented an apparatus by which the absorption of gases can be determined. He found that carbon dioxid and other gases could enter the system through the outer wall. Baths containing sulphur gases might hence be useful in chronic rheumatism, diabetes and various skin diseases. Salt in a bath did not penetrate the skin unless in a concentration of at least ten per cent.

It was learned that rabbits could be killed by passing different poisons through the skin. One of these is tetrachlorethane, which is used in industry. It may thus constitute a risk to the workmen. The skin was also found to be permeable to camphor and mercury.

The Banana Cure for Diarrhea

BOTH the apple and banana have been used successfully in this country and in Europe for diarrheal diseases of infants and children. One advantage of this tropical fruit over the apple is that it is richer in calories. It also has a considerable amount of chlorin, sodium and potassium, which, according to German authorities, cause increased water retention and prevent too great a loss in weight.

Dr. C. Loring Joslin, of the University of Maryland School of Medicine, reports in the *Southern Medical Journal* the results of banana therapy in thirty cases of diarrhea, fourteen of dysentery and ten of typhoid fever, all treated in a hospital. Usually only water was given the first twenty-four hours. Both banana powder

and the raw fruit were employed. From one to two ounces of the dried form were fed each day. The fruit was fully ripe; that is, the pulp was soft and the peel flecked with brown. From two to five bananas, mashed and put through a fine sieve, were eaten daily. In severe cases, fat-free Bulgarian buttermilk or boiled skim milk was part of the diet.

The diarrhea ceased much sooner on the banana fare than with the controls. There was also an average gain in weight as against a loss in the other group. Similar results were obtained in the dysentery cases. There was an immediate and appreciable reduction in the number of stools. In typhoid fever only those patients were benefited who had diarrhea. The powder proved very effective in diarrhea, while the raw fruit was more efficacious in dysenteries and typhoid in older children.

Metchnikoff showed many years ago that the stools of bats fed on bananas were free from bacteria and putrefaction and had an odor closely resembling that of bananas.

The banana because of its large content of carbohydrates supplies a good nutrient medium for the protective bacteria. It is probably less active than Lacto-Dextrin but may be advantageously used together with this highly efficient means of combating intestinal putrefaction and especially infections affecting the colon.

What Habitual Hoarseness May Signify

NOT ENOUGH attention is paid to that very common complaint, chronic hoarseness, in the opinion of Dr. Justin M. Waugh (*Cleveland Clinic Quarterly*). The usual prescription for it is a gargle or a favorite remedy for colds. In using a gargle, the muscular action of the throat combined with closure of the epiglottis is directed entirely to holding the solution

above the level of the larynx, and it practically always succeeds in doing this. Even if the fluid reached the uppermost part of the larynx, it would still not reach the vocal apparatus. Within the so-called voice-box may develop a large variety of pathological conditions, and these may become secondary to extensive pathology in contiguous structures. Hoarseness may be produced by chronic congestion of the cords or of the mucous membranes, ulceration, granulomata, new growths or by impairment of the nerve supply to the vocal cords.

Paralysis of one or both vocal cords may be due to disease of the central nervous system. Many pathological changes may occur within the neck and chest cavity which will cause pressure on the recurrent nerves with consequent impairment of the function of one vocal cord. The larynx may suffer injuries such as fractures, incised wounds or burns. Cancer of the larynx begins insidiously and in its early stages progresses slowly. If diagnosed promptly, the prognosis for lasting cure is better than in the case of cancer in any other part of the body.

More Deaths from Scavenger Mussel Poisoning

THE mussel is a scavenger. It is fond of filth of almost any sort and performs a very useful function in consuming the floating filth always found in the shallow waters of all large bodies of water. This is true of all shellfish. We quite agree with the anonymous poet who declared,

"That man must have had a palate covered o'er
With brass or steel
Who on a rocky shore,
First broke the oozy oyster's
pearly coat,
And risked the slimy morsel
down his throat."

The filthy eating habits of mussels and other shellfish have long been clearly understood,

and the State Board of Health of California has for several years had a rigid quarantine against sea mussels from Monterey County north to the Oregon line during the summer. But this year two residents of Los Angeles died from eating the sea food at a Ventura County beach. Hence the ban has been extended to the Mexican border. Investigation at the University of California has shown that the mussels are made poisonous by microscopic animal organisms or protozoa and also by the marine glow-worms which produce such beautiful displays off the Southern California coast (*California and Western Medicine*).

The *Canadian Medical Association Journal* reported the death of two boys, eight years of age, who cooked mussels over a fire at the seashore. After eating them, they felt sick and went home. One of them became unconscious and died ten minutes after a doctor reached him. His companion recovered. On the same day, the same doctor was called to attend three others suffering from mussel poisoning. Two of them had eaten sparingly and got well. The third had later eaten more freely and died soon after.

The same poison is also found in the clam and the sand crab. Deaths from eating mussels have been reported from a number of European countries. In California over two hundred persons have suffered from mussel poisoning, of whom eight died.

Nature the Best Doctor for Boils

THE OLD saying, "Squeeze a pimple and make a boil; squeeze a boil and make a carbuncle," according to Dr. Oscar W. Bethea, of Tulane University of Medicine, New Orleans, has been confirmed by clinical experience.

In the treatment of carbuncles of the face, the mortality was twice as great in cases

in which excisions were made as in cases in which there was no surgical interference.

Heat is the best remedy. Heat kills pain when properly applied and also hastens the natural healing process by which the infection is mastered and eliminated.

The application must be made intensively. Hot cloths wrung out of water containing ten per cent of lactose and applied directly to the affected part, the applications being renewed every five minutes for an hour, will in most cases afford complete relief from pain and greatly stimulate the natural healing process.

Symptoms of Vitamin B Deficiency

DEFICIENCY of vitamin B occurs more frequently than that of any other vitamin. This is doubtless due to the fact that such a large percentage of our staple foodstuffs are denatured by subjection to processes which remove from the food elements that are essential to good nutrition. The following list includes some of the most common evidences of vitamin B deficiency:

Atrophy and inactivity of the bowels.

Loss of hunger.

Complete loss of appetite.

Meat juice does not cause return of appetite; vitamin B does.

Atrophy of the genital glands (McCarrison).

Disappearance of germ cells.

Ten per cent wheat embryo in the diet is sufficient to produce good growth; three times as much is necessary for lactation.

Failure of appetite due to lack of vitamin B is mild beriberi. This is doubtless very common.

In muscle meat, the quantity of vitamin B is too small to admit of accurate measurement.

Healthful Recipes

VEGETABLE SOUP WITH NOODLES

½ cup diced carrots	Water to make 2 quarts soup
½ cup diced turnips	2 tsps. Savita
½ cup chopped cabbage	2 tsps. butter
½ cup chopped onion	1 cup diced potatoes Noodles, ½ recipe 1 tsp. salt

Cook the carrots, turnips, cabbage, and onion until tender. Then add the rice, diced potatoes, salt and Savita, then the noodles. Cook twenty to thirty minutes; add butter and serve. Package noodles may be used, in which event a little longer cooking will be required.

NOODLES

1 egg	½ cup flour (about) ½ tsp. salt
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Beat the egg slightly and add flour to make a stiff dough. Knead about ten minutes. Cover and let stand one half hour. Roll very thin and let dry one hour. Roll like a jelly roll. Cut in very thin slices crosswise and shake to unfold. Add to the boiling soup.

SAVORY ROAST OR MOCK TURKEY

2 cups legume purée	2 tsps. sage
2 eggs	1 cup strained tomato
½ cup ZO or toasted bread crumbs	2 cups nut meal or finely chopped nuts
½ cup browned flour	½ cup cream
2 tsps. celery salt	2 tsps. grated onion 1 tsp. salt

Cook the legumes, lentils, peas or beans, until quite tender and dry. Make into a purée by mashing through a colander. Beat the egg slightly, add the purée and the other ingredients in the order given. Bake in a loaf in a hot oven twenty to thirty minutes, or until nicely browned. Serve with Cream Sauce or Brown Sauce.

SAVITA BROWN SAUCE

2 cups water	4 tsbps. flour
1 tbsp. Savita	4 tsbps. butter

Melt the butter, add the flour and cook until brown. Add the water and stir until thickened, then add the Savita and stir until dissolved.

BAKED PROTOSE WITH MUSHROOM DRESSING

1 pound Protose	2 cups Savita Broth 3 tsbps. butter
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Cut the protose into ¾-inch slices and place in a buttered pan. Brown slightly; cover with Savita broth and bake slowly for one hour. Baste frequently with the broth. Serve with Mushroom Dressing and brown gravy.

SAVITA BROTH

Two teaspoons Savita dissolved in 2 cups of water.

MUSHROOM DRESSING

2 cups bread crumbs	½ cup chopped mushrooms
2 tsbps. butter	1 cup hot water
1 egg	½ tbsp. onion
1 tsp. salt	juice ¼ tsp. sage

Pour hot water over bread crumbs, add butter, salt, onion and sage. Beat egg and stir into other ingredients. Add mushrooms and bake in a moderate oven.

CAULIFLOWER CALIFORNIA

1 head cauliflower	1 tbsp. sugar
2 cups milk	½ tsp. salt
4 tsbps. butter	½ cup grated cheese
6 tsbps. flour	Slices of tomato

Soak cauliflower in salt water one half hour and drain. Cook cauliflower until tender in boiling, salted water. Drain. Melt three tablespoonfuls butter in saucepan, stir in flour and add milk slowly. Season with salt and add cheese. Mix with cauliflower and turn into but-

tered baking dish. Cover top of cauliflower with thin slices of peeled tomato, sprinkle with salt, and a little sugar and dot with one tablespoonful butter. Bake in hot oven.

POTATO APPLES

2 cups mashed potatoes	½ cup bread crumbs
1 egg	½ cup grated cheese
Salt	12 cloves
2 tsbps. cream	

Cook potatoes in boiling, salted water until done. Mash and measure. Add beaten egg, cream, grated cheese, and salt to taste. Make the balls to represent apples. Roll in sifted bread crumbs, insert cloves to represent stem and blossom ends and bake.

CARROT SOUFFLÉ

2 eggs	4 tsbps. cream
1 cup carrot purée	½ tsp. salt

Steam the carrots and press through a colander. Beat the egg thoroughly, add the cream, salt and purée. Fill buttered ramekin dishes three-fourths full, set in a pan of hot water and bake in a moderate oven till set. Serve immediately.

“ZO” BUTTERSCOTCH PUDDING

1 pint milk	½ tsp. vanilla
½ cup Vegetable Gelatin	½ cup rice
1 cup brown sugar	2 tsbps. butter
	1 cup “ZO”
	½ tsp. salt

Cook the rice in a double boiler with the milk. Soak the Vegetable Gelatin in warm water twenty minutes. Drain and add to the milk and rice while cooking. Cook the butter and the sugar together until brown, and add to the milk. When the rice is tender, remove from the fire; add the vanilla and “ZO,” and turn into molds. When set, remove from the molds and serve with cream.

THE HEALTH QUESTION BOX

Hyperthyroidism

S. P. D., Vermont, asks: What is the nature of hyperthyroidism?

Answer.—In hyperthyroidism there is an excessive activity of the thyroid gland. The thyroid gland has to do with a good many different functions of the body, particularly with the heart action and the condition of the skin, and affects the general nutrition. It also influences mental and nervous conditions.

When a person's thyroid gland is excessively active, his muscle tension is very high, so that the hands tremble. He perspires much. The temperature is likely to be above normal. The metabolism rate is high because the gland pours out an excess of secretion into the circulation.

The cause of hyperthyroidism differs in various cases. It is sometimes due to focal infection. In a large proportion of cases, it is due to poisons absorbed from the colon. Many persons have made excellent recoveries by simply rest in bed and careful regulation of the diet, avoiding everything that would produce a tendency to toxemia, especially meat and eggs. In some cases surgery is indicated.

Blood Pressure

M. W. L., Ohio, asks: Is a blood pressure of 166 for one aged fifty-three years too much?

Answer.—Yes, 166 is too much for a person fifty-five years old, or for a person forty years old, or for a person seventy-five years old, or for one one hundred years old, or for any age. Of course 166 is not so bad as 200. There is only one normal blood pressure. 105 to 120 may be regarded as the normal blood pressure for all ages. When the arteries become hardened either by disease or advancing age, the

blood pressure is likely to rise. Old age is a disease, and like most other diseases, may be prevented.

The blood pressure varies a little according to one's activities. If one is very active, his blood pressure will rise. When he lies down or remains quiet, it will fall. If he is nervous his blood pressure will rise, but the blood pressure does not normally vary with the age. It is higher because his blood vessels are becoming damaged and he has to have a little higher pressure in order to carry the blood through the arteries. If a person's blood vessels are normal and other conditions are normal, his blood pressure will be somewhere between 105 and 120. The idea that a person's blood pressure should be his age plus one hundred was exploded many years ago.

The French poet, Cazalis, said, "A man is as old as his arteries." When your blood pressure begins to go up, it means your arteries are getting old.

Liver Spots

D. E. S., Illinois, asks: What causes liver spots and how can they be removed?

Answer.—Liver spots are produced by autointoxication or intestinal toxemia, the result of putrefaction of the retained residues in the colon. Increased activity of the colon and change of the intestinal flora are the means of combating this condition. The brown coloring is caused by the deposit in the skin of a poisonous pigment known as *brenzatechin*.

Acute Indigestion

C. H., Texas, asks: What causes acute indigestion, and what remedy would you suggest to cure the same?

Answer.—Some indiscretion in eating, eating too much or

eating unwholesome food, is the usual cause of acute indigestion. A hot fomentation over the stomach, hot water drinking and, if necessary, emptying of the stomach by vomiting or the use of the stomach tube, are the measures required for relief. Future attacks should be prevented by avoiding the cause.

Carrots

L. S. B., New York, asks: Are raw carrots good to correct or neutralize the acidity of the blood?

Answer.—Yes. Carrots are strongly basic and excellent when there is a tendency to acidosis. The blood does not become acid under any circumstances, but its alkalinity is diminished and this does harm in a great variety of ways. So-called acidosis is not an acid state of the blood, but simply diminished alkalinity. This condition is best cured and prevented by diet, that is by the use of basic or alkaline foods, such as fruits and vegetables, especially potatoes, which should be chosen instead of cereal breakfast foods, since all cereals are acid-ash foods and tend to lessen the blood alkalinity. The same is true respecting all meats and eggs.

Colitis

L. B., Iowa, asks: What can be done for colitis?

Answer.—Colitis, or infection of the colon, may be cured by keeping the colon clean, getting rid of the poisons and replacing them through proper diet, by friendly germs. This process is known as "changing the flora." Hot enemas and diathermy are excellent means of helping to accomplish this result. The process of changing may be greatly hastened by the liberal use of Lacto-Dextrin and soy acidophilus milk, a beverage food remedy derived from the soy bean and useful in helping to "change the flora."

The Food Value of Bran

(Continued from page 13)

of the colon and under these circumstances that bland diets are more effective in controlling the constipation than is any rough, mechanically irritating food like bran. In such cases bran may so intensify the spasticity that obstruction necessitating mechanical or even surgical removal may result from its use.

"It is the experience of many physicians that otherwise normal persons who suffer from constipation due solely to inadequate bulkiness of their diets will develop irritable colons if bran is taken in excessive doses for a short time or in ordinary doses continuously for longer times. Vague abdominal pains occur, associated with bloating, belching and excessive flatus; these symptoms promptly disappear when the ingestion of bran is discontinued.

"Danger from the use of bran is greatest when constipated individuals eat bran, and, not obtaining relief with small portions, take larger quantities of this rough, mechanically irritating food. The indiscriminate use of bran without the supervision of physicians therefore is undesirable. While many constipated persons without any digestive disorders may be benefited by the addition to their diets of bran in doses that are not excessive, alternating the use of bran with agar and other allied products or the provision of diets containing an adequate amount of residue less coarse than bran is considered to be a more desirable therapeutic procedure.

General Decision on Allowable Claims for Wheat Bran

"On the basis of the evidence reviewed in the foregoing report, the Council on Foods has considered the place of wheat bran in the human diet and has adopted the following general decision:

"Bran may be useful as a source of bulk in the diet.

* * * *

"Constipation due to insufficient roughage in the diet should yield to bran eaten regularly. A competent physician should be consulted for cases not corrected in this simple manner."

An Unsound Argument

WHAT might be taken as a good word for tobacco and coffee was spoken at the last meeting of the American Association for the Advancement of Science. Professor A. L. Winsor and E. I. Strongin of Cornell University reported that the inhaling of smoke from one cigaret over a period of ten minutes caused marked unsteadiness of the hands while the man was smoking and for about forty-five minutes afterwards. The pulse and breathing rates were increased fifty per cent. But if the person drank two cups of coffee or one pint before smoking, there was little unsteadiness of the hands and this ceased almost immediately when the cigaret was cast aside.

This experiment might have a vicious effect on unthinking people, who would see in it an argument for accompanying one evil with another. The truth is that a warning is given against both habits. Certainly the unsteadiness of the hands is an indication of disturbed functioning, a hint from Nature of an abuse perpetrated. The speeding up of the respiration and pulse show that Nature is trying to get rid of the poisons ingested.

But does the preliminary drinking of coffee wipe out both evil effects, giving you pleasure unalloyed by bad consequences? Assuredly not. If a man smites you in the face, and knocks you sideways, and then smites you on the other cheek and restores you to an upright position, the blows have neutralized one another so far as your posture is

concerned. But you have painful evidence on both cheeks that you have suffered injury. An antidote will relieve the system of a poison, but will not wholly wipe out the detriment caused.

Similarly the two poisons of tobacco and coffee have opposite effects which may neutralize certain symptoms. But the harm of subjecting the nerves and the body generally to these deleterious substances remains. If the man persists in smoking he would do better to endure the shaky hands and the rapid pulse, rather than to have a pint of coffee do additional violence to his long suffering body.—S.

Pain Not Caused by Weather Changes

NUMEROUS individuals believe that they can foretell a change in the weather by pain in their corns, in rheumatic joints, or in some other part of the body which has been injured. W. P. Elkhardt, of the department of physiology of the University of Illinois, sought to test this idea scientifically. For six months he kept charts of weather conditions — temperature, humidity, barometric pressure, wind velocity and sunshine. His subject was an ex-soldier who had been grievously wounded in France. His hand and shoulder had been injured and for two years he was in the hospital suffering great pain. Later the pain was irregular.

The man believed that his distress returned as weather conditions altered. For the six months he put down the occurrence of these attacks. There was absolutely no correlation between these and the weather changes. His belief was entirely erroneous (*Journal of Laboratory and Clinical Medicine*). Doubtless many amateur weather prophets will not be convinced by this single test and will believe that they could make a better showing.—S.

Send GOOD HEALTH to your friends. See special offers on page 29.

Johnson's Health Rules

IF Boswell correctly informs us, Dr. Samuel Johnson was by no means a conspicuous example of simple living. On some occasions at least, he was a prodigious gourmandizer. Nevertheless, he was a real philosopher and laid down the following very sensible rules for travelers seeking health:

"1. Turn all care out of your head as soon as you mount the chaise.

"2. Do not think about frugality; your health is worth more than it can cost.

"3. Do not continue any day's journey to fatigue.

"4. Take now and then a day's rest.

"5. Get a smart seasickness if you can.

"6. Cast away all anxiety, and keep your mind easy.

"This last direction is the principal; with an unquiet mind, neither exercise, nor diet, nor physick, can be of much use."

Johnson might well have added to the above rules of health the importance of eating fruit, of which he himself was very fond. Boswell says that he often ate seven or eight peaches before breakfast.

Lord Horder on Our Civilization

MUCH discussion has been aroused in England over an address by the eminent physician, Lord Horder, before the British Association for the Advancement of Science on "The Strain of Modern Civilization." His words are perhaps even more applicable to this country than they are to his own. He said that clinical observation revealed the effects of this strain. Functional diseases, as against organic, had increased, whether in the nervous system proper, the heart and blood vessels or the internal secreting glands. Behind the screen of headache, indigestion and fatigue, inquiry revealed the anxiety factor.

Those more subtle germ diseases called "subinfections" were growing more numerous; in them the virulence of the microbe was low while the susceptibility of the host was high.

As causes he mentioned fear connected with the competition of living, the grave sense of international insecurity, the pace at which we lived and the precariousness of life itself in the streets, so that we seemed to live by accident rather than to die by it; the monotony and drabness inherent in the long hours of many workers, the exciting nature of our amusements, the stupid, needless and provocative noise, and finally the slackening moral code.

As partial remedies he named slum clearance, playing fields, pictures, museums, music, libraries and quiet for brain workers and others. It was not too much science but too little that had got us into this situation. Lord Horder still had faith in the individual and in the enormous potentialities of the human spirit. His address is summarized in the *Journal of the American Medical Association*.

The Toothbrush Does Not Prevent Dental Decay

THE story of a little girl in Labrador whose teeth were so bad that all had to be pulled, is told by Dr. V. Suk in the *Lancet*. She was fifteen years old, but looked eleven. She said pathetically that she had always used a toothbrush every day. The trouble lay in diet. In the later part of the eight long months of winter her family sometimes had almost nothing to eat, perhaps only unsweetened tea and stale ship's biscuit; no fat of any kind, not even margarin.

Dr. Suk is professor of anthropology at Masaryk University, Brno, Czechoslovakia, and has examined many human beings in different parts of the world. He found the Eskimos to have far better teeth than

any white races. Old women who have to chew sealskins to make boots, kayaks, etc., may wear their teeth down to the level of the gums, yet the teeth show no decay. Among a thousand natives in Africa he never saw the thick film on the teeth that is so often seen in this country. These blacks eat much unsoftened food.

The good doctor protests against the use of the innumerable mouth washes and tooth pastes which are advertised to have "inhibitory powers against bacteria." The maltreated oral mucosa, he says, besides having to endure boiling hot and icy cold drinks, has to suffer all the thousand antiseptics that busy chemical industry has invented.

—S.

Testimony of Sir John Ross, the Arctic Explorer

I WENT to Greenock, and was bound apprentice for four years, during which time I made three voyages to the West Indies and three to the Baltic I had, therefore, a good opportunity of observing the injurious effects of alcohol in hot climates. My first voyage was to Jamaica, where the captain and several of the crew died. Excepting that I never drank spirits, I took no care of myself. I was exposed to the burning sun, slept on deck in the dew, and ate fruit, without feeling any bad effects. I soon lost my hat and shoes, and ran bare-headed and barefooted, but I never tasted spirits; and to this alone I attribute the extraordinarily good health I enjoyed. After having spent the summer in hot Jamaica, I spent the winter in cold St. Petersburg, Russia, and with the same hardihood. My next voyage was to the Bay of Honduras; all the common sailors, twelve in number, died, and I was the only person that went out in the ship who came home alive, which I attribute entirely to my abstaining from spirituous liquors.

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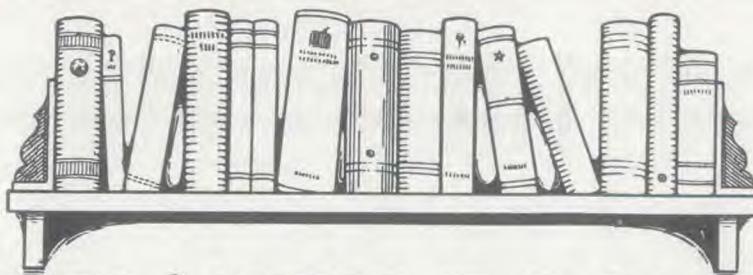
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Acid and Alkaline or Basic Foods

ACID FOODS are those which leave an acid ash or residue, either when burned or when eaten and oxidized in the body. Basic or alkaline foods leave an alkaline residue. Acid-ash foods lower resistance, lessen endurance, and tend to cause high blood pressure, hardening of the arteries and other old age changes. Alkaline-ash foods produce the opposite effects. Here are lists of the most common acid and alkaline foods showing their relative degrees of acidity or alkalinity per ounce. It should be noted that this property of foods has nothing to do with flavor. Nearly all acid tasting foods belong to the basic-ash class.

Acid-Ash Foods

Meats

Beefsteak	3.0	Pork	2.8
Beef, dried	4.0	Salmon	3.2
Beef, liver	3.0	Sardines	3.2
Codfish	3.5	Trout	2.6
Chicken	3.0	Turkey	3.0
Ham	3.7	Veal	3.0
Herring	5.2	Eggs, whole	3.1
Oysters	4.3	Eggs, white	1.4
		Eggs, yolk	7.0

Cereals

Barley	3.0	Shredded wheat	3.3
Bread, white	2.0	Cracked wheat	3.3
Bread, whole		Cornmeal	1.5
wheat	2.1	Flour, whole	
Bread, buckwheat	2.0	wheat	3.3
Corn, green .....	.5	Lentils, legume	1.5
Oatmeal	3.3	Peanut, legume .....	.1
Rice	2.7	Walnut (Calif.)	2.2

Basic-Ash Foods

Fruits

Apples	1.0	Peaches	1.4
Apricots	1.8	Pears	1.0
Bananas	1.5	Pineapple	1.9
Cherries	1.7	Plums	1.8
Cranberries .....	.5	Prunes (dried)	1.6
Dates	3.2	Raisins	6.9
Figs	29.4	Watermelon .....	.3
Muskmelons	2.1		

Vegetables

Asparagus .....	.2	Onions	4
Beans, dried	5.0	Parsnips	3.3
Beans, lima, fresh	4.0	Peas, dried	1.4
Beans, lima, canned	2.7	Peas, green .....	.2
Beans, lima, dried	12.0	Potatoes	2.1
Beets	3.0	Potatoes (chips)	6.5
Cabbage	1.6	Potatoes, sweet	1.8
Carrot	3.0	Pumpkin .....	.4
Cauliflower	1.5	Rhubarb	2.5
Celery	2.2	Rutabagas	3.5
Chard	4.5	Spinach	7.6
Cucumbers	2.2	Squash .....	.8
Garbanzo	8.0	Soy bean	13.0
		Tomato	1.6
		Turnip7

Miscellaneous

Almonds	3.3	Cream	2
Coconut	2	Molasses	1.7
Milk	5		

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The Sanitarium has brought together under unified control all the resources that modern medical science has to offer in the diagnosis and treatment of disease. To this end no expense has been spared. Members of the staff are always on the alert for new developments and are quick to employ them as soon as they have proved their value.

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Second: Taking bodies that have been abused by improper living and, by corrective measures, restoring damaged parts to normal functioning.

Third: Alleviation of the suffering and extension of the life expectancy of those af-

flicted with incurable diseases, by means of carefully controlled treatment and a program of right living.

This calls for many and varied applications of modern medicine. Diet and advanced therapeutic methods constitute a very important part of the treatment, but surgery has its place and is used when necessary. A complete modern hospital is part of the Sanitarium equipment.

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